

We claim:

1. An active implantable medical device of the defibrillator, cardiovertor and/or implantable antitachycardia pacemaker type, including:
 - means for sensing ventricular and atrial cardiac activity;
 - means for delivering an antitachycardia therapy able to apply selectively a defibrillation shock, a cardioversion shock and an antitachycardia pacing stimulation;
 - means for detecting patient activity;
 - means for delivering antibradycardia stimulation able to deliver ventricular and atrial stimulation pulses at a stimulation frequency determined according to detected patient activity, said stimulation frequency having a maximum stimulation frequency, the stimulation pulses being delivered at a rate defined according to a calculated escape interval including an atrio-ventricular delay and a ventriculo-atrial delay;
 - first means for analyzing the detected cardiac activity with respect to a given threshold frequency of analysis and determining a frequency of cardiac activity and when the determined frequency of ventricular cardiac activity is greater than said given threshold frequency of analysis, said first analyzing means being able to recognize and discriminate the presence of a ventricular tachycardia and a ventricular fibrillation, said means for delivering antitachycardia therapy being responsive to a detected ventricular tachycardia or a detected ventricular fibrillation by delivering an appropriate antitachycardia therapy;
 - wherein said antibradycardia therapy means further comprises said maximum stimulation frequency being higher than said threshold frequency of analysis; and

second means for analyzing the cardiac activity and detecting in said cardiac activity a particular succession of events corresponding to a presence or an appearance of a ventricular tachycardia, said second analyzing means further comprising means for prolonging the duration of the ventriculo-atrial delay until the later of the end of said calculated escape interval and the end of a programmed maximum interval of detection of ventricular tachycardia corresponding to the aforementioned threshold frequency of analysis increased by a tolerance delay.

2. The device of claim 1, wherein the second analyzing means further comprises means for detecting the particular succession of events as an occurrence of a ventricular extrasystole.

3. The device of claim 2, wherein said first analyzing means comprises means for identifying an acceleration of a ventricular frequency that is ventricular in origin, and said second analyzing means further comprises means for detecting the particular succession of events as an occurrence of a ventricular event presenting a coupling interval less than or equal to the maximum interval of detection of ventricular tachycardia, in the presence of a proven acceleration of the rate having a ventricular origin.

4. The device of claim 2, wherein the second analyzing means further comprises means for detecting the particular succession of events as a coupling interval between ventricular events and an occurrence of a ventricular event presenting a coupling interval less than or equal to the maximum interval of detection of ventricular tachycardia, in the presence of a ventricular extrasystole preceding said ventricular event, the duration of said coupling interval being equal to a duration separating the extrasystole from the ventricular event within a given tolerance factor.

5. The device of claim 2, wherein the antibradycardia stimulation delivery means further comprises means for delivering atrial stimulation pulses synchronous to a ventricular extrasystole, and the second analyzing means further comprises means for prolonging the duration of the atrial escape interval started on a synchronous atrial stimulation, said prolongation being maintained until the later of the end of the calculated atrial escape interval and the end of the programmed maximum interval of detection of ventricular tachycardia increased by a predetermined safety factor.

6. The device of claim 1, wherein the second analyzing means further comprises means for detecting a presence of a confirmed rate of ventricular tachycardia.

7. The device of claim 1, wherein the second analyzing means further comprises means for prolonging the duration of said aforesaid ventriculo-atrial delay until the later of one of the end of the calculated escape interval and the end of the programmed maximum interval of detection of ventricular tachycardia increased by a predetermined safety factor.

8. The device of claim 6, wherein said predetermined safety factor is a programmed fixed duration.

9. The device of claim 1, wherein the antibradycardia stimulation delivery means operates in a mode VVI and the second analyzing means further comprises means for prolonging the duration of the ventricular escape interval started on a ventricular event presenting a coupling interval less than the programmed maximum interval of detection of ventricular tachycardia, and in the presence of an acceleration of the rate having a ventricular origin, said prolongation being maintained until the later of the end of the calculated ventricular escape interval and the end of

the programmed maximum interval of detection of ventricular tachycardia increased by a predetermined safety factor.